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ABSTRACT

The purpose of these companion studies was to assess immediate and delayed effects of social modeling, cognitive structuring, and two self-management strategies for increasing affective self-disclosure in undergraduate males. Subjects were randomly assigned to: (a) social modeling, (b) cognitive structuring, (c) attention-placebo, or (d) no-training control groups. Following training, subjects took a performance test and two paper-and-pencil measures. With this treatment used as a blocking variable, subjects were then randomly assigned to: (a) goal-directed behavior, (b) self-reinforcement, or (c) no-training control groups. A delayed posttest was administered three weeks later. Results indicated that social modeling and cognitive structuring had immediate effects on affective self disclosure. ALso, a combination of social learning and self-management strategies was more effective over time than any single treatment or no treatment. Explanations and implications of these results are discussed. (Author)

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Effects of Social Modeling, Cognitive Structuring, and Self-Management Strategies on Affective Self-Disclosure

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This article is based on the doctoral dissertations of both authors at Michigan State University, East Lansing, Michigan.

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Effects of Social Modeling, Cognitive Structuring,
and Self-Management Strategies on Affective Self-Disclosure

Although research in the area of self-disclosure has been extensive, many inconsistencies in findings have been reported (cf. Cozby, 1973). One general conclusion which can be drawn from these conflicting results is that the self-disclosure construct is extremely complex and thus is difficult to explain empirically. Methodological problems across studies have contributed largely to these inconsistencies. For example, definitions of self-disclosure have not always been operationalized, and the distinction between affective and cognitive components has seldom been made. Actual performance has been used less frequently than self-report measures, and when it has been employed the quantity and quality of self-disclosure have often been confounded (Goodstein & Reinecker, 1974). Furthermore, the primary focus of self-disclosure research has been on identifying specific parameters of the construct. Of the few studies which have been directly concerned with interventions designed to increase self-disclosure, most have focused on the counselor-client relationship (e.g., Highlen & Baccus, in press; Mann & Murphy, 1975).

With the above concerns in mind, we chose to: (a) focus on the affective component of self-disclosure, (b) devise criteria to measure both amount and quality, (c) evaluate the efficacy of intervention strategies designed to teach affective self-disclosure skills.

The efficacy of training strategies based on social learning principles has received support in other areas of socially sanctioned behavior, most notably in dating (e.g., Curran, 1975; MacDonald, et al., 1975) and assertive skill training (e.g., McFall & Twentyman, 1973; Rathus, 1973). However,

most of these training strategies have focused exclusively on behavioral techniques. Within the last few years, the use of cognitive strategies has increased. Several studies have compared the effects of cognitive and behavioral strategies for facilitating socially sanctioned emotional responses. For example, Glass, Gottman, and Shmurak (1976) found that cognitive self-statement modification was superior to response-acquisition treatment with girl-shy males in dating skills training. Also, in a task analysis of assertive behavior, Schwartz and Gottman (1976) discovered that a major contributor to non-assertive behavior was the nature of the individual's internal dialogue. The major implication from this study is that cognitive, rather than skill, deficits may be the cause of some maladaptive social responses. To date, however, no study has examined behavioral and cognitive training programs for facilitating the expression of feelings. Therefore, the major purpose of Study 1 was to make such a comparison.

Along with the growing interest in cognitive-behavioral strategies is the increased use of self-management strategies. In spite of this interest, however, very little research has focused on the effectiveness of goal-setting and self-reinforcement strategies. For example, Mahoney (1972) found that goal-setting when compared to self-monitoring did not improve management of obesity, while Kelb et al., (1968) found social reinforcement superior to a combination of self-monitoring and goal-setting in a group. As a primary treatment strategy, self-reinforcement reduced anxiety (Rehm & Marston, 1968), and as a secondary strategy self-reinforcement maintained performance level in a nonsense syllable discrimination task (Marston & Kanfer, 1963). Most recently, Greiner and Karoly (1976) found a combination

of self-monitoring, self-reinforcement, and planning strategies were most effective for improving study activity. Thus, the differential effectiveness of goal-directed practice and self-reinforcement strategies as primary and secondary training procedures remains unanswered. Study 2 addressed this self-management issue within the context of teaching affective self-disclosure skills.

For these companion studies, affective self-disclosure was defined as a speaker' voluntary verbal statement made as an initiator or respondent in a dyadic interaction which expresses his emotions in feeling terms, is present oriented, and self-referenced. Therefore, within the context of this research affective self-disclosure signifies the expression of feelings to others.

STUDY 1

Study 1 examined the effects of social modeling and cognitive structuring multicomponent training strategies on the affective self-disclosure of single, undergraduate males. Specifically, the objectives of this investigation were:

1. to assess the impact of social modeling and cognitive structuring strategies on males regarding (a) amount and (b) quality of affect, (c) concomitant level of anxiety, (d) skill necessary for affective self-disclosure, and (e) attitudes toward disclosing feelings.
2. to examine training effects over time by administering a delayed posttest to participants who did not receive the self-management procedures of Study 2.

Based on pilot study results, it was predicted that the training

effects of social modeling and cognitive structuring would be greater than those for attention-placebo and no-training control conditions. A second hypothesis stated that the effects of cognitive structuring would be greater than for social modeling, while a third predicted that no difference would exist between attention-placebo and no-training control conditions. For the delayed posttest, the same directional hypotheses were formulated. In addition, it was hypothesized that no measure or treatment-by-measures interaction effects would be found.

Method

Participants

Fifty-two undergraduate males volunteered to participate in a research/training project for improving expression of feelings to others. However, because of technical problems, data were incomplete for four subjects. Therefore, only data from 48 subjects were analyzed for the first question of interest. For the three-week follow-up, only 13 of the 16 subjects who did not receive training in Study 2 returned. The average age was 21.5 years with a range of 18-26 years. All subjects were randomly assigned to training conditions.

Training Conditions

Participants received one of four conditions. The social modeling and cognitive structuring training modules were presented on videotape, while the attention-placebo condition was presented on audiotape. These three training conditions were of comparable length, each lasting approximately 50 minutes.

Social modeling. Participants viewed a videotaped multicomponent training package emphasizing learning affective self-disclosure through overt vicarious conditioning procedures. This package consisted of an introduction and four discrete learning components: (a) instruction, (b) behavioral modeling, (c) overt behavior rehearsal, and (d) a review of the procedures covered in the learning package. Paper-and-pencil self-tests were given at the end of parts a and b, with provision for recycling through the component if the minimum criterion of acceptable performance was not met.

Cognitive structuring. Participants viewed a videotaped multicomponent treatment package which emphasized learning affective self-disclosure through both verbal and imaginal covert cognitive mediating processes. This package consisted of an introduction and four discrete learning components: (a) instruction, (b) behavioral and cognitive (i.e., internal self-statement) modeling, (c) cognitive self-modeling, and (d) a review of procedures covered in the learning module. Paper-and-pencil self-tests were given at the end of the first two components with provision for recycling if the minimum criterion of acceptable performance was not met.

Attention-placebo. While sitting in a recliner chair, participants listened to an audiotaped presentation of training in deep muscle relaxation. This condition was included to control for any demand characteristics which may have influenced participants' perception of their role in the study.

No-training. Participants assigned to this waiting list control group received posttesting only.

Dependent Measures

Performance test. The performance test consisted of 16 audiotaped situations. Type-of-subject-role (initiator respondent), type-of-feeling-response (positive, negative), and sex-of-best-friend (male, female) were crossed factors, with two different situations for each of the eight combinations presented. Participants were instructed to consider the taped voices as their best male or female friend to control for intimacy level in the simulated dyadic interactions. After each stimulus situation was presented, the subject was instructed to make a response which was audiorecorded. Following each verbalization, the participant reported the anxiety he felt while making his response. A 1-7 Likert-type paper-and-pencil scale was used for this self-report anxiety measure. Each anxiety score was computed by summing across the 16 situations.

Typescripts of the audiotaped responses were made and then unitized using a modified version of Auld and White's (1956) rules for dividing continuous conversations into sentences. Two raters were trained to evaluate typescripts for amount and quality of affective self-disclosure. After two three-hour training sessions, Hoyt interrater reliability coefficients of 1.00 for amount and .99 for quality were obtained.

Each unit within the 16 responses was rated for amount and quality of affect by the raters. A unit was considered to contain affect if it met: (a) Crowley's rules (1970), or (b) a definition of affect (English & English, 1958; Goldenson, 1970). If one unit within a response met the criteria for affect, an amount score of one was given for the total response. Therefore, the amount score range was 0-16. Only those units which possessed an affective component were rated for quality. Thus, the affect quality score was

the summed total of all the unit quality scores across the 16 situations. The quality measure included six categories of varying numerical weights: (a) reference, 0-12 points, (b) time orientation, 1-6 points, (c) appropriateness of affect, 0-8 points, (d) reason, 0-5 points, (e) specificity of reason, 0-8 points.

Paper-and-pencil instruments. The skill test was a 24-item multiple choice measure with correct answers keyed to the definitional criteria for affective self-disclosure. The attitude survey was a 30-item instrument. Subjects rated items such as "When I'm angry with others, it's best to tell them so" and "I'm more comfortable keeping my feelings to myself" on a 1-7 Likert scale, ranging from strongly agree to strongly disagree. Hoyt reliability coefficients were .87 for the skill test and .84 for the attitude survey.

Data Analysis

To test for the main effect immediately following training, a one-way multivariate analysis of variance utilizing orthogonal planned comparisons was employed. A repeated measures multivariate analysis of variance test was used to ascertain the maintenance of treatment effects over time. The same orthogonal planned comparisons were again tested.

Results

Immediate Posttest

The means and standard deviations for the five dependent measures and four training conditions are presented in Table 1. The multivariate analysis of variance testing the first planned comparison for social

modeling and cognitive structuring versus attention-placebo and no-treatment control was significant, F (5,40) = 5.97, $p < .0004$. This finding indicated that the main effects of both training strategies were greater than effects for the two control groups. Although the second prediction that effects of cognitive structuring would be greater that those for social modeling was not supported, there was a strong, but nonsignificant, trend in the predicted direction, F (5,40) = 2.33, $p < .06$. The final planned comparison between attention-placebo and no-training control groups was not significant, F (5,40) = .70, $p < .70$.

Insert Table 1 about here

Delayed Posttest

As predicted, there was no treatment-by-measures interaction across immediate and delayed posttests, F (5,40) = .96, $p < .53$. Likewise, none of the measures effects for the three planned comparisons was significant, thus suggesting that the difference between the four training groups did not significantly differ across the two testing times. However, contrary to prediction, none of the treatment effects for the three comparisons across immediate and delayed posttesting was significant, F (5,5) = ,93, $p < .53$ for the contrast between the two experimental and the two control groups, F (5,5) = .54, $p < .75$ for the contrast between experimental groups, and F (5,5) = 1.03, $p < .49$ for the

contrast between the two control groups. Therefore, the results do not support the hypothesis that the training effect would be maintained at the three-week follow-up.

Discussion

The principal finding of this study was that multicomponent cognitive and behavioral strategies combining instruction, modeling, and rehearsal resulted in significant changes in affective self-disclosure level immediately following training. However, less clear is the relative effectiveness of cognitive structuring and social modeling strategies. Although the predicted superiority of cognitive structuring was not confirmed, the data indicate a strong trend in this direction. For subsequent research on affective self-disclosure, we recommend that a task analysis be conducted prior to training. As Schwartz and Gottman (1976) indicate, it is important to identify whether the problem is one of skill deficit or due to other factors such as self-perceived anxiety and negative self-statements. Thus, one possible explanation for the slight superiority of cognitive training is that this intervention more directly addressed the participants' actual deficits. However, this issue must be empirically addressed before this conclusion can be accepted with certainty.

The unexpected finding that training effects were not maintained over time may be explained in several ways. First, since cell size ranged from two to four, statistical power was greatly reduced and may not have been sufficient to detect group differences. However, since training group means declined on the delayed posttest while control group means

sharply increased, the regression effect may have contributed to the lack of differences. Since attrition only occurred within both control groups, perhaps only the most highly motivated control subjects returned, thereby sharply increasing control delayed posttest scores. A final explanation is equally plausible. The 50-minute training modes may not have been potent enough to maintain training effects over three weeks.

STUDY 2

The overall purpose of this study was to assess the effects of self-management strategies as primary or secondary training procedures for increasing affective self-disclosure of single, undergraduate males. With the training from Study 1 used as a blocking variable, participants were randomly assigned to one of three conditions: (a) self-reinforcement, (b) goal-directed practice, or (c) no-training control. It was predicted that no interaction between prior training (Study 1) and self-management training would be found. A second hypothesis predicted that the main effects of goal-directed practice and self-reinforcement conditions would be equivalent, while a third predicted that the effect of no-training control would be less than either of the two self-management conditions. Finally, it was predicted that groups receiving training in both studies would be superior to groups receiving either one or no training strategy from either study.

Training Conditions

Participants received one of three conditions: (a) self-reinforcement,

(b) goal-directed practice, or (c) no-training control. The essential components of both training strategies followed the Bandura (1971) and Kanfer (1971) models for self-management. Self-observation was facilitated by a clear operational definition. Graduated self-imposed goals and contracting for change were viewed as elements in self-evaluation. In the self-reinforcement condition, choice of reinforcers and self-determined reinforcement plans were used to plan for self-reinforcement.

Self-reinforcement. In phase 1, each participant completed a programmed text consisting of seven units: (a) definition and examples of affective self-disclosure, (b) description of self-reinforcement procedure, (c) definition, examples of, and practice in goal setting, (d) principles, examples, and development of shaping plan, (e) identification of valued self-reinforcers and development of personalized reinforcement plan, (f) development of final and daily goals recorded on packet of cards, (g) completion of self-change contract. Self-tests followed each of the first six units, with provisions for recycling if the participant's understanding did not meet criterion of 90% for each unit. At the end of phase 1, participants showed their change contracts to an assistant, reviewed the content of the programmed text, and discussed their own self-reinforcement projects. They were also instructed to use the packet of cards prepared while working on the programmed text to record when goals were met and reinforcement received, the number of feeling statements made to males and females, and whether their daily experience of expressing feelings was good, bad, or neutral.

Goal-directed practice. This group also received a two-phase training module. In phase 1, participants completed a programmed text compar-

able to the self-reinforcement text without the units on self-reinforcement. Provisions were also made for recycling and mastery learning. In phase 2, each participant also discussed his goal-directed project, change contract, and the instructional content with an assistant. These conditions were the same as they were with the self-reinforcement group.

No-training control. This group was dismissed following their prior training posttest from Study 1 and requested to return for follow-up in three weeks.

Instrumentation, Data Collection and Analysis

The same dependent measures and testing procedures used in Study 1 were employed at the three-week follow-up session. Since five participants did not return for the second session and equal n's were required for data analysis, subjects were randomly discarded from training groups so that the usable N was reduced to 36. Data were analyzed using a two-way multivariate analysis of variance to test both interaction and main effects. Also, a one-way multivariate analysis of variance was conducted to compare four levels of a transformed independent variable which corresponded to participants' amount of training experience in both studies. The training amounts compared were: (a) training in both studies, (b) no training in either study, (c) only training in Study 1, (d) only training in Study 2.

Results

Means and standard deviations for the dependent measures and three training conditions are presented in Table 2. As predicted, there was no interaction between prior training in Study 1 and training in Study 2,

F (5,55.6) = 1.14, $p < .35$. Likewise, the second prediction that results of both self-management strategies would be equivalent was supported, F (6,20) = .603, $p < .70$. However, the third hypothesis which predicted that either self-management strategy would be significantly better than the no-training condition was not supported, F (5,20) = 1.00, $p < .44$. However, results from univariate F tests revealed differences in the predicted direction (with the overall alpha level of .05 divided by five for each univariate test) for amount, F (1,24) = 5.06, $p < .03$, and for quality, F (1,24) = 4.90, $p < .04$.

Insert Table 2 about here

Tests Across Total Training Experience

Means and standard deviations for the five dependent measures and the four training combinations across Studies 1 and 2 are presented in Table 3. It was predicted that final scores across the five dependent variables would demonstrate that the combination of training from Studies 1 and 2 would be superior to either training experience alone or to neither training experience. The multivariate analysis of variance supported this prediction, F (5,28) = 6.50, $p < .0004$. Results also supported the prediction that the effects of training procedures used in Studies 1 and 2 were equivalent, F (5,28) = .79, $p < .2591$. Finally, it was predicted that the effects of a single training procedure from either study would be significantly better than the effects of no training. This prediction, however, was not supported, F (5,28) = 1.39, $p < .26$.

Insert Table 3 about here

Discussion

As predicted, no significant difference was found between the two self-management conditions. However, neither self-management strategy produced a greater effect than the no-training condition. Therefore, the major hypothesis of this study was not confirmed. However, a trend favoring the two self-management procedures for the amount, quality, and skill measures can be observed in the cell means presented in Table 2. It seems possible that this trend of change would favor detection of differences if the power and precision of the test were higher or if the training strategies were more potent. However, the nonsignificant differences between goal-directed practice and self-reinforcement suggest that such training changes would not produce significant differences in terms of this contrast. Therefore, it appears that the two training methods have equivalent effects. If this is true, economy is gained through use of goal-directed practice since it requires less time to complete and requires less record keeping for the subject.

To our knowledge, this is the first study to provide experimental evidence suggesting that goal achievement is inherently reinforcing for college students. This reinforcing effect is probably related to positive self-evaluations which came from goal attainment. On the other hand, although the two self-management groups scored similarly on all measures,

many more in the self-reinforcement group regularly met their goals. Since there is no reason to believe that self-reinforcement goals were more realistic than those set by the goal-directed group, it seems likely that self-reinforcement served as motivation for meeting goals. Therefore, it appears that self-reinforcement in this study proved to be a motivator only, and that overt self-reinforcement was not a necessary condition for change. In this context, the positive feedback gained from self-evaluation of goal achievement could be considered a covert self-reinforcer which was at least as effective as overt self-reinforcement.

GENERAL DISCUSSION

The comparison of the total training experience across both studies is the result of greatest importance. Since the groups who received training in both studies scored significantly higher than all other groups, this finding supports the basic contention underlying this research: namely, that short-term training is best when combined with such secondary training programs as self-management if desired change is to be maintained.

The failure to detect differences between any of the single training groups and groups who received no training is difficult to understand. The cell means reported in Table 3 indicate that the neither training group did most poorly across all measures. The lack of significance may be related to possible attrition bias in the groups receiving no training. Low power and precision should also be considered as possible causes.

Brevity of training procedures is both studies most likely contributed to the absence of single treatment effects over time. Therefore, the lack

of treatment potency appears to be the primary limitation of this research.

The major implication from these companion studies is to add empirical support to the contention that multi-phase training strategies used in conjunction are more effective than one-shot, short-term interventions. The combination of modeling plus self-management and cognitive structuring plus self-management is similar to many two-phase behavioral strategies used in counseling practice. Therefore, the demonstrated success of both combinations has implications for future research on communication skills training.

With regard to the parameters of affective self-disclosure, future studies are needed to examine sex differences and the differential effects of the situational factors which were identified and controlled in this study.

References

Auld, F., & White, A. M. Rules for dividing interviews into sentences. The Journal of Psychology, 1956, 42, 273-281.

Bandura, A. Vicarious and self-reinforcement processes. In R. Glaser (ed.), The nature of reinforcement. New York: Academic Press, 1971, pp. 228-278.

Cozby, P. C. Self-disclosure: A literature review. Psychological Bulletin, 1973, 79, 73-91.

Crowley, T. J. The conditionability of positive and negative self-reference emotional affect statements in a counseling-type interview. Unpublished doctoral dissertation, University of Massachusetts, 1970.

Curran, J. P. Social skills and systematic desensitization and reducing dating anxiety. Behavior Research and Therapy, 1975, 13, 65-68.

English, H. B., & English, A. C. A comprehensive dictionary of psychological and psychoanalytical terms. London: Davids McKay, 1958.

Glass, C. R., Gottman, J. M., & Shmurak, S. H. Response-acquisition and cognitive self-statement modification approaches to dating-skills training. Journal of Counseling Psychology, 1976, 23, 520-526.

Goldenson, R. M. The encyclopedia of human behavior. New York: Doubleday, 1970.

Goodstein, L. D., & Reinecker, V. M. Factors affecting self-disclosure: A review of the literature. In B. A. Mahler (Ed.), Progress in Experimental Personality Research (Vol. 7), New York: Academic Press, 1974, pp. 49-77.

Greiner, J. M., & Karoly, P. Effects of self-control training on study activity and academic performance: An analysis of self-monitoring, self-reward, and systematic-planning components. Journal of Counseling Psychology, 1976, 23, 495-502.

Highlen, P. S., & Baccus, G. K. Effect of reflection of feeling and probe on client self-referenced affect. Journal of Counseling Psychology, in press.

Kanfer, F. H. The maintenance of behavior by self-generated stimuli and reinforcement. In A. Jacobs and L. B. Sachs (Eds.), The psychology of private events. New York: Academic Press, 1971, pp. 39-59.

Kolb, D. A., Winter, S. K., & Berlew, D. E. Self-directed change: Two studies. Journal of Applied Behavior Science, 1968, 4, 453-471.

MacDonald, M. L., Lindquist, C. U., Kramer, J. A., McGrath, R. A., & Rhyne, L. D. Social skills training: Behavior rehearsal in groups and dating skills. Journal of Counseling Psychology, 1975, 22, 224-230.

Mahoney, M. J. Self-reward and self-monitoring techniques for weight control. Unpublished doctoral dissertation, Stanford University, 1922.

Mann, B., & Murphy, K. C. Timing of self-disclosure, reciprocity of self-disclosure and reactions to an initial interview. Journal of Counseling Psychology, 1975, 22, 304-308.

Marston, A. R., & Kanfer, F. H. Human reinforcement: Experimenter and subject controlled. Journal of Experimental Psychology, 1963, 66, 91-94.

McFall, R. M. & Twentyman, C. T. Four experiments on the relative contributions of rehearsal, modeling, and coaching to assertive training. Journal of Abnormal Psychology, 1973, 81, 199-218.

Rathus, S. A. Instigation of assertive behavior through videotaped-mediated assertive models and directed practice. Behavior Research and Therapy, 1973, 11, 57-65.

Rehm, L. P., & Marston, A. R. Reduction of social anxiety through modification of self-reinforcement: An instigation therapy technique. Journal of Consulting and Clinical Psychology, 1968, 32, 565-574.

Schwartz, R. M., & Gottman, J. M. Toward a task analysis of assertive behavior. Journal of Consulting and Clinical Psychology, 1976, 44, 910-920.

Table 1

Mean and Standard Deviations for Amount, Quality, Skill, Anxiety, and Attitude Across Training Modes in Study 1

Dependent Measure	Training Mode							
	Social Modeling		Cognitive Structuring		Attention-Placebo		No-Training Control	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Amount	11.1	3.0	10.8	3.3	5.4	2.7	6.8	4.7
Quality	356.3	102.3	361.6	113.2	178.8	92.4	230.0	160.3
Skill	9.2	3.1	13.3	6.1	6.1	3.1	6.7	5.4
Anxiety	47.8	13.0	50.8	15.5	44.9	14.7	48.4	10.6
Attitude	151.3	16.9	153.6	13.8	134.0	22.2	142.8	16.4

Note. For the anxiety measure, lower scores reflect lower self-reported anxiety. For all conditions, $n = 12$.

Table 2

Means and Standard Deviations for Amount, Quality, Skill, Anxiety, and Attitude Acrcss Traning Modes in Study 2

Dependent Measure	Training Mode					
	Goal-Directed Practice		Self-Reinforcement		No-Training Control	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Amount	11.4	2.5	10.6	1.9	8.8	3.2
Quality	385.6	96.6	360.5	76.6	293.0	112.1
Skill	12.3	6.1	11.5	5.7	8.6	3.6
Anxiety	43.2	10.2	50.7	6.0	46.2	15.3
Attitude	149.4	13.6	147.1	19.2	141.3	13.8

Note. For the anxiety measure, low scores indicate low anxiety. For all conditions, n = 12.

Table 3

Means and Standard Deviations for Amount, Quality, Skill, Anxiety, and Attitude Across Amount of Traning Received in Study 1 and 2

Dependent Measure	Training Combinations							
	Both Traning Conditions n = 12		Neither Traning Condition n = 6		Study 1 Training n = 6		Study 2 Training n = 12	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Amount	12.0	2.7	7.3	5.3	10.2	1.9	10.0	4.0
Quality	395,6	103.9	241.0	176.0	344.9	74.5	350.6	152.6
Skill	14.5	6.2	7.5	2.4	9.7	3.9	9.3	6.4
Anxiety	46.8	8.1	52.5	9.5	39.8	18.6	47.0	12.5
Attitude	160.3	16.8	137.0	21.3	145.7	10.2	136.2	20.7

Note. For anxiety, low scores indicate low anxiety.